

WE CLAIM:

1. A method of forming a programmable conductor memory cell comprising:
sputtering metal and chalcogenide glass onto a prepared substrate; and
maintaining the prepared substrate at a temperature higher than room temperature during the sputtering.
2. The method of Claim 1, wherein sputtering metal and chalcogenide glass comprises first sputtering a chalcogenide glass element and then separately sputtering a metal layer thereover.
3. The method of Claim 1, wherein sputtering metal and chalcogenide glass comprises co-sputtering.
4. The method of Claim 1, wherein the prepared substrate comprises a top insulating layer with vias therein.
5. The method of Claim 1, wherein the programmable conductor memory cell comprises metal and chalcogenide glass containing between about 25% and 35% metal.
6. The method of Claim 1, wherein the metal is a fast diffuser.
7. The method of Claim 1, wherein the metal is silver.
8. The method of Claim 1, wherein the metal is copper.
9. The method of Claim 1, wherein the chalcogenide glass comprises components selected from the group consisting of sulfur, germanium, selenium, and tellurium.
10. The method of Claim 1, wherein the chalcogenide glass comprises germanium selenide.
11. The method of Claim 1, further comprising maintaining the prepared substrate at a temperature higher than room temperature for at least 5 minutes before sputtering the metal and chalcogenide glass.
12. The method of Claim 1, wherein maintaining the prepared substrate at a temperature higher than room temperature comprises maintaining the prepared substrate at between about 30°C and 150°C.

13. The method of Claim 1, wherein maintaining the prepared substrate at a temperature higher than room temperature comprises maintaining the prepared substrate at between about 45°C and 60°C.

14. A method of co-sputtering a homogeneous metal/chalcogenide glass layer onto an irregular surface, comprising keeping the irregular surface at an elevated temperature, above room temperature, before and during the co-sputtering.

15. The method of Claim 14, wherein the metal/chalcogenide glass layer comprises silver, germanium, and selenium.